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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/811,617 | BLANCHON, CHARLES-GUILLAUME0 | |
| | Examiner | Art Unit | |
| | Geoffrey P. Shipsides | 1732 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15, 16, 20, 22-24, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. JP 05154868 A (Momotome).

With regard to claim 15, Momotome teaches a molding method where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck close to the inside 21a of the cavity." (Constitution). It is further the examiner's position that the laminated sheet 23 constitutes a drapable material. It is further noted that when the mold halves are closing in the process of Momotome that the laminated sheet is at some point placed onto the lower mold. It is further noted that pusher/pusher/core 25 of the upper mold is movable with respect to the upper mold part 27. It is further noted that the pressing of the laminated sheet constitutes a compacting of the sheet. It is further noted that the process

of Momotome inherently includes a step of unloading the part. It is further the examiner's position that the pusher/core of the upper mold is movable with respect to the rest of the upper mold because it is movable with respect to part 27. It is further the examiner's position that closing the mold halves inherently defines a join plane (See area above element 22, Figure 1).

With regard to claim 20, the sheet of Momotome is pressed substantially in the center of the sheet (Figures).

With regard to claim 22, Momotome teaches the trimming of the material that projects from the join plane (Figure 1c).

With regard to claim 23, Momotome teaches a blade mounted on a cursor of the mold for the trimming of the material (Figure 1(a), ref. No. 27).

With regard to claim 24, Momotome teaches a cursor that has an inside wall on part 27 that cooperates with the mold to form a compression chamber and teaches the overmolding of the sheet with thermoplastic material inside of the compression chamber (Figures).

With regard to claim 26, Momotome teaches the injection molding of the thermoplastic material into the mold after the mold has been closed (Figure 1(e)).

With regard to claim 16, Momotome teaches a molding method where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck

close to the inside 21a of the cavity. The cavity 21 is raised after that, the fringe part of the laminated sheet 23 is cut off by a cutting part 27 and a vessel- like blank 17 is obtained." (Constitution). It is further the examiner's position that the laminated sheet 23 constitutes a drapable material. It is further noted that when the mold halves are closing in the process of Momotome that the laminated sheet is at some point placed onto the lower mold. It is further noted that pusher/pusher/core 25 of the upper mold is movable with respect to the upper mold part 27. It is further noted that the pressing of the laminated sheet constitutes a compacting of the sheet. It is further noted that the process of Momotome inherently includes a step of unloading the part. Part 27 is provided on the cursor and constitutes a blade. It is further the examiner's position that the pusher/core of the upper mold is movable with respect to the rest of the upper mold because it is movable with respect to part 27.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 7, 8, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome).

King et al. teaches a process for producing multilayered articles (abstract) where a thermoplastic film is placed over the cavity of a first mold part (Figure 1). Then a molding pusher/core of a second mold part is pressed against the central portion of the thermoplastic film followed by the closure of the remaining parts of the second mold around the first pressed pusher/core (Figures 2 and 3). The periphery of the first mold includes a recess that corresponds with a cutting blade positioned on the second mold so that the thermoplastic film is trimmed upon the closing of the mold (Figure 3, ref. Nos. 12 and 19). King et al. also teaches for the injection of polymer into the mould cavity once the excess film is trimmed (abstract). It is further intrinsic in the process of King et al. that the finished product is demolded. It is the examiner's position that the thermoplastic film as taught by King et al. constitutes a drapable material. It is further the examiner's position that the process of pressing the film into the first mold intrinsically compacts the film to some degree.

With regard to claim 1, King et al. does not teach that the cutting blade (trimmer) is movable relative to the second mold. Momotome, however, teaches a similar process where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck close to the inside 21a of the cavity. The cavity 21 is raised after that, the fringe part of the laminated sheet 23 is cut off by a

cutting part 27 and a vessel- like blank 17 is obtained. Then the pusher/core 25 and pusher/core side pressing part 26 are raised a little, synthetic resin 18 is injected into an injection space 19 between the cavity 21 and the pusher/core 25 and a vessel main body 14 is completed." (Constitution). Momotome teaches the use of a cutting part that is movable with respect to the two mold parts. It is clear from the Figures of Momotome that the cutting part is cuts the fringe of the thermoformed sheet after the complete formation of the sheet and that the cutting part of Momotome also acts to further define the mold cavity for an injection molding step. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to use a cutting method as taught by Momotome that can be controlled to take place after the sheet is completely shaped in order to ensure that the sheet is not prematurely cut during the sheet forming process of King et al.

With regard to claim 2, King et al. teaches the sheet is initially pressed against the first portion of the mold substantially in the center of the first portion of the mold (Figure 2).

With regard to claim 3, it is further the examiner's position that the remaining sections of the mold (other than the pusher/core) constitute a second pusher/pusher/core that is progressively pushed into the first mold part after the pusher/core is pressed into the first mold part.

With regard to claim 4, both King et al. and Momotome teach the use of blades that are mounted at the cursor of the mold cavity (Figures of both King et al. and Momotome).

With regard to claim 5, King et al. does not specifically teach the use of the curser of the mold to form a compression chamber, but does teach the overmolding of the sheet inside of the mold. Momotome, however, does teach a mold that is also used as a compression chamber in order to properly shape the sheet prior to the injection molding against the sheet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to use the entire mold cavity to compress the sheet prior to the injection molding step as taught by Momotome in order to more accurately shape and place the sheet within the mold prior to the injection molding step in order to form a superior finished product.

With regard to claim 7, both King et al. and Momotome teach the injection molding of material into the mold after the mold has been closed.

With regard to claim 8, King et al. teaches the arrangement of a cutting blade (rib) and a corresponding grove which is used to trim the sheet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to make the cutting blades movable as taught by Momotome in order to better control the process of King et al. in order to ensure that the sheet of King et al. is not prematurely cut during the operation of molding the sheet.

With regard to claim 18, the sheet of King et al. comprises a thermoplastic material (Abstract, line 4).

With regard to claim 19, King et al. teaches the use of polypropylene as the thermoplastic material (Column 5, line 56).

5. Claims 3, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 1-5, 7, 8, 18, and 19 above, and further in view of U.S. Patent No. 3,115,678 (Keen et al.).

With regard to claim 3, even if the remainder of the second portion of the mold of King et al. does not constitute a second pusher/pusher/core, Keen et al. teaches a process of forming a drapable material (plastic carpet) by the use of an apparatus that uses multiple pusher/pusher/cores (Figures). Keen et al. teaches that the method includes the steps of placing carpet having a hot thermoplastic backing across a lower mold (without draping the carpet into the wells of the mold) and then lowering thereupon a multi-section male mold. The arrangement is such that mating engagement is made progressively and successively with the lower mold by different sections of the male mold (Column 1, lines 18-26). It is clear form the teachings of Keen et al. that the use of multiple male mold pusher/pusher/core parts progressively used prevents the bunching up of the inserted carpet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to use multiple pusher/pusher/cores as taught by Keen et al. in order to ensure that a compression thermoformed insert is properly conformed to desired dimensions without bunching.

With regard to claims 9 and 10, King et al. does not specifically teach a shaped article with a setback. Keen et al., however, teach thermoformed articles with setbacks. It is further well known in the art to product various articles with a

setback. It would have been obvious to one having ordinary skill in the art at the time of invention to use the process of King et al. to produce every type of multilayered articles, including the articles that include a setback. Further, Keen et al. teaches pusher/pusher/cores that correspond with a set back formed in the finished product, and it would have been further obvious to one having ordinary skill in the art to provide a pusher/pusher/core to ensure that the laminated sheet properly forms into the setback portion of the mold.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 1-5, 7, 8, 18, and 19 above, and further in view of U.S. Patent No. 4,545,105 (Kowalsky) and U.S. Patent No. 6,328,549 (Valyi et al).

With regard to claim 6, Although King et al. teaches the injection of the backing material onto the formed laminated sheet, it is also well known to form the same structure by thermoforming sheets with backing layers already layered on top of the sheet. Valyi et al. and Kowalsky both teach process where material is layered on top of a sheeting material. Valyi et al. teaches the extrusion of material onto the sheet (Figures). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. by providing the backing material on the back of the laminated sheet prior to the compression thermoforming of the sheet in order to form a finished article as is taught by Valyi et al. and Kowalsky.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 1-5, 7, 8, 18, and 19 above, and further in view of U.S. Patent No. 4,545,105 (Kowalsky).

With regard to claim 14, King et al. does not specifically teach the molding of motor vehicle parts. Kowalsky, however, teaches the use of polypropylene as a molding material (Columns 5 & 6) in the molding of an automobile bumper. It would have been obvious to one having ordinary skill in the art at the time of invention to use the process of King et al. to produce a automobile bumper as taught by Kowalsky in order to more efficiently produce an automobile bumper.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome).

King et al. teaches a process for producing multilayered articles (abstract) where a thermoplastic film is placed over the cavity of a first mold part (Figure 1). Then a molding pusher/core of a second mold part is pressed against the central portion of the thermoplastic film followed by the closure of the remaining parts of the second mold around the first pressed pusher/core. The periphery of the first mold includes a recess that corresponds with a cutting blade positioned on the second mold so that the thermoplastic film is trimmed upon the closing of the mold. King et al. also teaches for the injection of polymer into the mould cavity once the excess film is trimmed (abstract). It is further intrinsic in the process of King et al. that the finished product is demolded. It is the examiner's position that

the thermoplastic film as taught by King et al. constitutes a drapable material. It is further the examiner's position that the process of pressing the film into the first mold intrinsically compacts the film to some degree. King et al. further intrinsically has a join plane between the two mold parts.

With regard to claim 15, King et al. does not specifically teach the preheating of the sheet. Momotome, however, teaches a similar process where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck close to the inside 21a of the cavity. The cavity 21 is raised after that, the fringe part of the laminated sheet 23 is cut off by a cutting part 27 and a vessel- like blank 17 is obtained. Then the pusher/core 25 and pusher/core side pressing part 26 are raised a little, synthetic resin 18 is injected into an injection space 19 between the cavity 21 and the pusher/core 25 and a vessel main body 14 is completed." (Constitution). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to include the preheating of the sheet as taught by Momotome in order to effect an exact shaping of the sheet of King et al.

With regard to claim 20, King et al. teaches the initial pressing in the substantial center of the sheet (Figures).

With regard to claim 21, it is further the examiner's position that the remaining sections of the mold (other than the pusher/core) constitute a second pusher/pusher/core that is progressively pushed into the first mold part after the pusher/core is pressed into the first mold part.

With regard to claims 22-24, King et al. teaches the trimming of the sheet, but does not teach the trimming of the sheet where it projects from the join plane (out of the mold). Momotome, however, teaches a mold tool that has a peripheral cutter that cuts off the material that projects out from the join plane (out of the mold). The trimmer of Momotome is independently controlled from the clamping action of the mold bodies and thus can be more accurately controlled. It would have been obvious to one having ordinary skill in the art at the time of invention to use modify the process of King et al. with the cutting method of Momotome in order to more accurately control the trimming method of King et al. in order to ensure that the sheet is completely shaped prior to the cutting. Momotome further teaches cutting blades mounted at the cursor of the mold (Figures). It would have been further obvious to one having ordinary skill in the art at the time of invention to use cutting blades as taught by Momotome in the process of King et al. in order to have a mechanism for controlling the cutting of the sheet.

With regard to claim 24, King et al. teaches the injection molding against the shaped sheet but does not specifically teach a mold with a inside wall at the cursor that is used to make the mold a compression chamber. Momotome, however, does teach such an arrangement in a mold where material is injected

against a shaped sheet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the mold of King et al. to include a cursor portion that is used to make the mold into a compression chamber in order to prevent injection molded material from leaking out of mold body.

With regard to claim 26, King et al. teaches the overmolding with thermoplastic material (Column 2, line 57).

With regard to claim 27, King et al. teaches that the sheet is a thermoplastic material (Abstract, line 4).

With regard to claim 28, King et al. teaches the use of polypropylene as the thermoplastic material (Column 5, line 56).

9. Claims 21, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 1-5, 7, and 8 above, and further in view of U.S. Patent No. 3,115,678 (Keen et al.).

With regard to claim 21, even if the remainder of the second portion of the mold of King et al. does not constitute a second pusher/pusher/core, Keen et al. teaches a process of forming a drapable material (plastic carpet) by the use of an apparatus that uses multiple pusher/pusher/cores (Figures). Keen et al. teaches that the method includes the steps of placing carpet having a hot thermoplastic backing across a lower mold (without draping the carpet into the wells of the mold) and then lowering thereupon a multi-section male mold. The arrangement is such that mating engagement is made progressively and successively with the lower mold by different sections of the male mold (Column 1, lines 18-26). It is

clear form the teachings of Keen et al. that the use of multiple male mold pusher/pusher/core parts progressively used prevents the bunching up of the inserted carpet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. to use multiple pusher/pusher/cores as taught by Keen et al. in order to ensure that a compression thermoformed insert is properly conformed to desired dimensions without bunching.

With regard to claims 29 and 30, King et al. does not specifically teach a shaped article with a setback. Keen et al., however, teach thermoformed articles with setbacks. It is further well known in the art to product various articles with a setback. It would have been obvious to one having ordinary skill in the art at the time of invention to use the process of King et al. to produce every type of multilayered articles, including the articles that include a setback. Further, Keen et al. teaches pusher/pusher/cores that correspond with a set back formed in the finished product, and it would have been further obvious to one having ordinary skill in the art to provide a pusher/pusher/core to ensure that the laminated sheet properly forms into the setback portion of the mold.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 1-5, 7, and 8 above, and further in view of U.S. Patent No. 4,545,105 (Kowalsky) and U.S. Patent No. 6,328,549 (Valyi et al).

With regard to claim 25, Although King et al. and Momotome teach process where the backing material is injection molded onto the formed laminated sheet, it is also well known to form the same structure by thermoforming sheets with backing layers already layered on top of the sheet. Valyi et al. and Kowalsky both teach process where material is layered on top of a sheeting material. Valyi et al. teaches the extrusion of material onto the sheet (Figures). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of King et al. by providing the backing material on the back of the laminated sheet prior to the compression thermoforming of the sheet in order to form a finished article as is taught by Valyi et al. and Kowalsky.

11. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome).

King et al. teaches a process for producing multilayered articles (abstract) where a thermoplastic film is placed over the cavity of a first mold part (Figure 1). Then a molding pusher/core of a second mold part is pressed against the central portion of the thermoplastic film followed by the closure of the remaining parts of the second mold around the first pressed pusher/core. The periphery of the first mold includes a recess that corresponds with a cutting blade positioned on the second mold so that the thermoplastic film is trimmed upon the closing of the mold. King et al. also teaches for the injection of polymer into the mould cavity once the excess film is trimmed (abstract). It is further intrinsic in the process of

King et al. that the finished product is demolded. It is the examiner's position that the thermoplastic film as taught by King et al. constitutes a drapable material. It is further the examiner's position that the process of pressing the film into the first mold intrinsically compacts the film to some degree. King et al. further intrinsically has a join plane between the two mold parts.

With regard to claim 31, King et al. does not teach that the cutting blade (trimmer) is movable relative to the second mold. Momotome, however, teaches a similar process where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck close to the inside 21a of the cavity. The cavity 21 is raised after that, the fringe part of the laminated sheet 23 is cut off by a cutting part 27 and a vessel- like blank 17 is obtained. Then the pusher/core 25 and pusher/core side pressing part 26 are raised a little, synthetic resin 18 is injected into an injection space 19 between the cavity 21 and the pusher/core 25 and a vessel main body 14 is completed." (Constitution). Momotome teaches the use of a cutting part that is movable with respect to the two mold parts. It is clear from the Figures of Momotome that the cutting part is cuts the fringe of the thermoformed sheet after the complete formation of the sheet and that the cutting part of Momotome also acts to further define the mold cavity for an injection molding step. It would have been obvious to one having ordinary skill in the art

at the time of invention to modify the process of King et al. to use a cutting method as taught by Momotome that can be controlled to take place after the sheet is completely shaped in order to ensure that the sheet is not prematurely cut during the sheet forming process of King et al.

With regard to claim 32, Momotome teaches the trimming off of the sheet material that extends form the join plane. It would have been obvious to one having ordinary skill in the art at the time of invention to trim off the sheet material that extends from the join plane in the process of King et al. when using the method of Momotome to trim the sheet material in order to more accurately control the trimming process.

12. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome).

King et al. teaches a mold for producing multilayered articles (abstract) that includes first and second mold parts that are movable with respect to each other, at least one pusher/pusher/core mounted on the second portion and movable relative thereto and capable of pressing a sheet at least locally against the first portion before the mold is closed (Figure 1). King et al. teaches a trimmer (Figure 1).

With regard to claim 11, King et al. does not teach a movable trimmer. Momotome, however, teaches a similar process to King et al. where a mold is used that includes a movable trimmer (Figures) that allows for a controlled trimming process separate from the compression process. It would have been

obvious to one having ordinary skill in the art at the time of invention to modify the apparatus of King et al. by substituting the cutting apparatus of Momotome for the trimmer of King et al. in order to have a better controlled trimming process.

With regard to claim 13, King et al. teaches the arrangement of a cutting blade (rib) and a corresponding grove which is used to trim the sheet. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the molding apparatus of King et al. to make the cutting blades movable as taught by Momotome in order to better control the process of King et al. in order to ensure that the sheet of King et al. is not prematurely cut during the operation of molding the sheet.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome) as applied to claims 11 and 13 above, and further in view of U.S. Patent No. 3,115,678 (Keen et al.).

With regard to claim 13, King et al. does not specifically teach a mold with a setback. Keen et al., however, teach a mold for forming thermoformed articles with setbacks. It is further well known in the art to product various articles with a setback. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the apparatus of King et al. to produce every type of multilayered articles, including the articles that include a setback and to therefore modify the mold of King et al. to include a setback as taught by Keen et al.

14. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,182,787 (King et al.) in view of Japanese Patent No. JP 05154868 A (Momotome).

King et al. teaches a mold for producing multilayered articles (abstract) that includes first and second mold parts that are movable with respect to each other, at least one pusher/pusher/core mounted on the second portion and movable relative thereto and capable of pressing a sheet at least locally against the first portion before the mold is closed (Figure 1). King et al. teaches a trimmer (Figure 1). King et al. intrinsically provides a means for placing the sheet between the mold parts (therefore on the first portion of the mold. King et al. teaches a pusher/pusher/core that is used to press the sheet against the first mold and this pusher/pusher/core is movable with respect to the second mold half (Figure 1). King et al. intrinsically teaches a means for closing the mold as the mold of King et al. is closed. The sheet of King et al. is intrinsically compacted to some degree in the pressing operation and thus intrinsically includes a compacting means. King et al. teaches a trimming means (Figure 1). King et al. also intrinsically teaches a means for unmolding the part as the part of King et al. is intrinsically removed from the mold after the molding operation in order to allow for the molding of another part.

With regard to claim 17, King et al. does not specifically teach a trimmer that trims a sheet at the point where the sheet projects form the join plane. King et al. does intrinsically include a join plane. Momotome, however, teaches a similar method and apparatus where a cutter is mounted to trim a sheet at the

point where the sheet projects from the join plane. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the molding apparatus of King et al. to including the trimming means of Momotome in order to allow for a more accurate trimming process.

15. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. JP 05154868 A (Momotome) in view of Japanese Patent No. JP 01141719 A (Yamamoto et al.).

Momotome teaches a molding method where "a preheated laminated sheet 23 is carried between a cavity 21 and pusher/core 25, the cavity 21 is raised and the laminated sheet 23 is pressed into the cavity 21 by the pusher/core 25. Then after the laminated sheet 23 is held by placing between a cavity side pressing part 22 and pusher/core side pressing part 26, the laminated sheet 23 is vacuum-drawn and the laminated sheet 23 is stuck close to the inside 21a of the cavity. The cavity 21 is raised after that, the fringe part of the laminated sheet 23 is cut off by a cutting part 27 and a vessel- like blank 17 is obtained. Then the pusher/core 25 and pusher/core side pressing part 26 are raised a little, synthetic resin 18 is injected into an injection space 19 between the cavity 21 and the pusher/core 25 and a vessel main body 14 is completed." (Constitution). It is further the examiner's position that the laminated sheet 23 constitutes a drapable material. It is further noted that when the mold halves are closing in the process of Momotome that the laminated sheet is at some point placed onto the lower mold. It is further noted that pusher/pusher/core 25 of the upper mold is movable with respect to the upper mold part 27. It is further noted

that the pressing of the laminated sheet constitutes a compacting of the sheet. It is further noted that the process of Momotome inherently includes a step of unloading the part. Part 27 is provide on the cursor and constitutes a blade. It is further noted that the laminated sheet and the injection molded synthetic resin are both intrinsically made of a thermoplastic material. It is further the examiner's position that pusher/pusher/core 25 of Momotome is movable with respect to part(s) 27 of the upper mold and is hence movable with respect to the upper (or second) mold part.

With regard to claims 33 and 34, Momotome does not specifically teach the pre-trimming of the sheet in the mold so that the thermoformed part is still connected to the sheet by small bridges. It is, however, notoriously well known in the art to make perforations in between thermoformed parts in order to allow for easy later separation. It is also well known to thermoform a single sheet into multiple articles that are separated at a later point in time. Yamamoto et al. teaches the perforation along separation lines in such thermoformed objects (Figures). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the process of Momotome to make the cutting apparatus only perforate the laminated sheet between sets of molded objects in order to allow for easy later separation. It is further noted that a perforation is provide (as opposed to instant separation) in order to allow for easier intermediate handling steps and it would have been obvious to one having ordinary skill in the art at the time of invention modify Momotome to mold multiple parts out of a single sheet and to perforate the separation lines between each

part as taught by Yamamoto et al in order to allow for easy intermediate handling before separation and easy separation.

***Response to Arguments***

16. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

17. Applicant's arguments filed 5-1-03 with regard to claims 33 and 34 have been fully considered but they are not persuasive.

The applicant argues that the combination of Momotome and Yamamoto et al. is improper because Momotome discloses an injection-molding step. It is, however, the examiner's position that Momotome teaches both thermoforming and injection molding steps and that the basic teaching of Yamamoto et al. applies to all molding operations. The basic idea of forming multiple molded parts in a single molding operation is notoriously well known in the art and does not apply only to a single type of molding operation. The fact that Momotome teaches an injection molding process would not deter one having ordinary skill in the art from using the teaching of Yamamoto et al. to modify the process of Momotome to produce multiple parts in a single molding operation that are pretrimmed in the molding process in order to allow for easy separation of the molded parts at a later time. Simply because Momotome teaches the cutting of the sheet in its entirety does not mean that one having ordinary skill in the art when viewing Yamamoto et al. would not see the advantage to only using the process of Momotome to only cut sections of the periphery of the sheet so that

multiple molded parts could be connected for easier handling and separated at a later point in time.

***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey P. Shipsides whose telephone number is 703-306-0311. The examiner can normally be reached on Monday - Friday 9 AM till 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D Crispino can be reached on 703-308-3853.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Geoffrey P. Shipsides/gps
July 1, 2003

Mark Eashoo

MARK EASHOO, PH.D
PRIMARY EXAMINER
Art Unit 1732
03 | Jul | 03